

A Library for the Ages: Revamping the Physical and Virtual Environment

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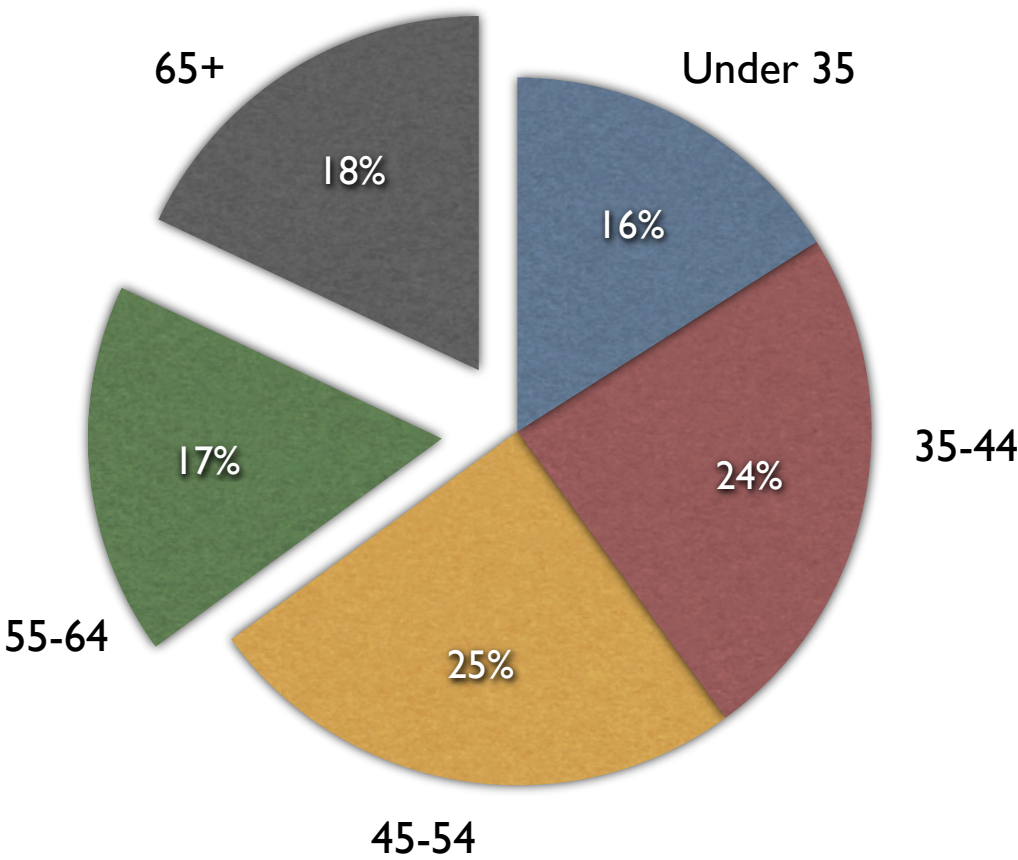
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How old are your physician users?

The Library designs learning activities, space and services for students keeping millennial characteristics in mind. However, our 2005 on-site usage survey showed that only 39% of physical library use is by students. The remaining 61% of use is by professional staff and others, many of whom are baby boomers or beyond.

Nationally, 35% of physicians are age 55 or over. In New York, the average age of physicians is 49, with 34% being age 55 or older. This is the same percentage as New Jersey, though the average age is 50.

Age distribution of physicians, 2004



Source: United States Health Workforce Profile. Rensselaer, NY: New York Center for Health Workforce Studies, October 2006.

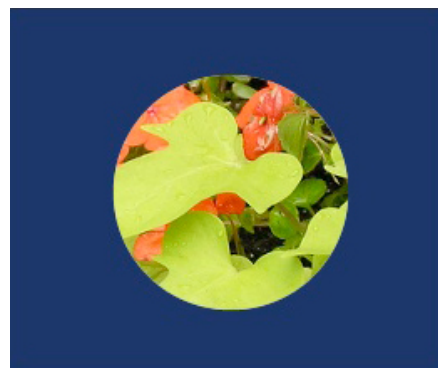
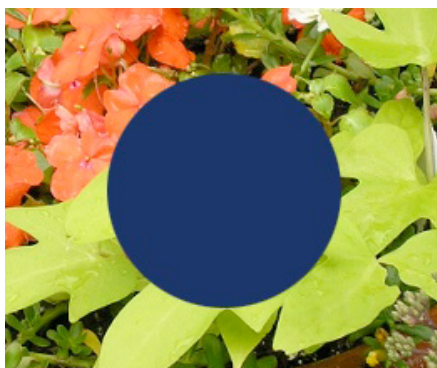
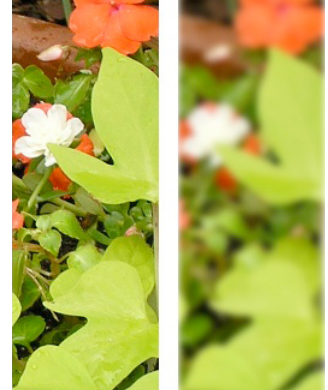
What happens when we age?

Vision Changes

Beginning between the ages of 40 and 50, the lens starts to lose elasticity, resulting in a decreased ability to focus vision, especially during reading.

More serious vision problems

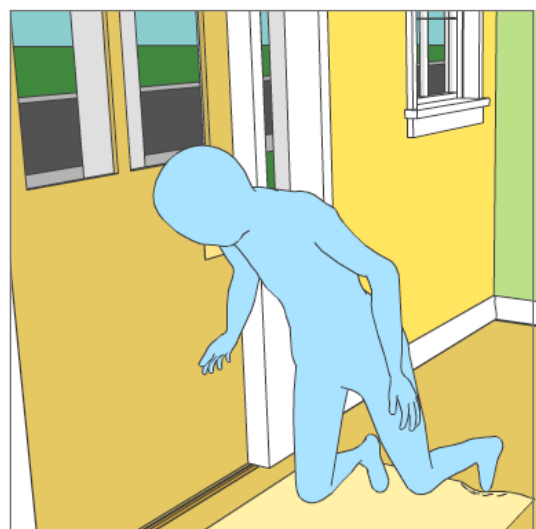
Central field loss (left)-- the leading cause of visual loss in older people in the US-- and peripheral field loss (right) are other problems that can affect the eye, especially with individuals suffering from diabetes or neurological conditions.



Source: <http://www.lighthouse.org/medical/the-aging-eye/>

Reduced Mobility

Aging may also take a toll on mobility. Environmental barriers can compromise performance in daily tasks and increase injury risk.



Source: <http://environmentalgeriatrics.com/>

The Library's Strategic Plan

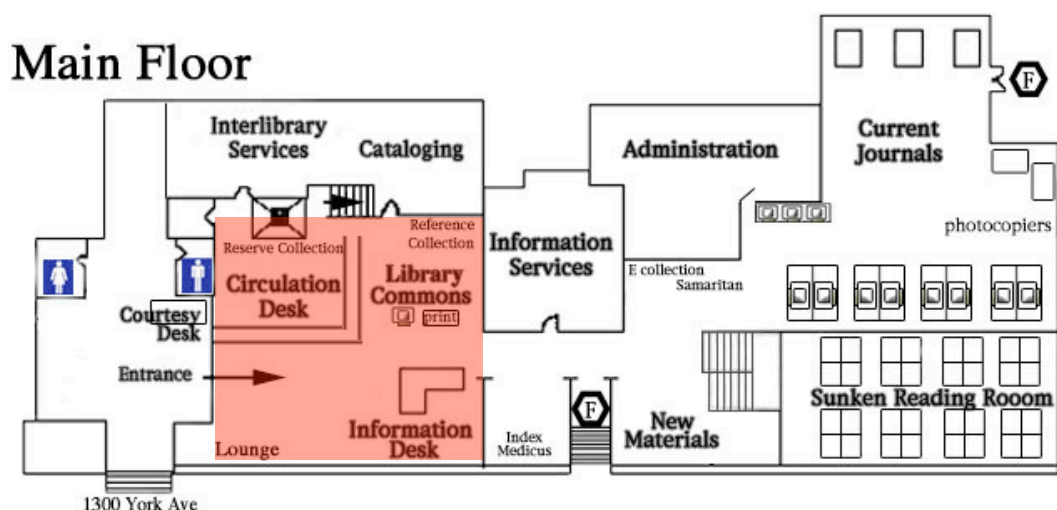
The Library's Strategic Plan addresses the physical and virtual library environment for our users of all ages.

Goal #3... Make every interaction positive, efficient, educational, and convenient.

Goal #5... Promote a culture and environment that is welcoming, stimulating and supportive, and adapts to needs of users.

Changing Spaces to Achieve Goals

The Library Commons (highlighted in red) is the front room of the Library with the Circulation Desk, Information Desk and Computer Commons. It is the closest and easiest area for users to get to, but also the loudest and most crowded with a variety of activities and functions.



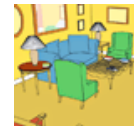
We are redesigning this area to combine the service desks and create some areas to work with collaboratively or with reserve/reference materials. Plans include carving out some stable consultation space to work with our users with mobility and hearing issues.

What is Environmental Geriatrics?

The study and application of design principles to interiors and products to optimize the health, function, and well-being of older adults

Environmental Geriatrics is also a program of the Division of Geriatrics and Gerontology at the Weill Cornell Medical College of Cornell University:

<http://www.environmentalgeriatrics.org/>



Visit their [3-D multimedia online tutorial](#).

Using Environmental Assessment in the Library

Step #1 Observe how users of all ages interact with library space, technology and materials.

Step #2 Conduct a GEM (Gerontological Environmental Modifications) Environmental Assessment
http://www.environmentalgeriatrics.com/pdf/enviro_assessment.pdf

This 15-page assessment is designed for homes, but covers many library-relevant aspects:

- ✓ Lighting (fixtures and natural light/glare)
- ✓ Furniture
- ✓ Flooring
- ✓ Doorways/Hallways (doorknobs are easy to use)
- ✓ Communication Devices
- ✓ Restrooms

Sample Finding from Assessments

Decisions based on usage patterns of certain patrons can make it difficult for others. GEM furniture recommendations provide an example:

- ✓ Furniture is stable for support if client holds or leans on while ambulating
- ✓ Chair is easy to get in/out of, firm seat, not too deep or low, arms on both sides

Previous Decision... The library switched to chairs with casters which are easy for staff and mobile patrons to move around.

Observation... Chairs with unlocked casters are not stable supports for patrons. A chair may have to be locked in place for a patron with mobility impairment to be seated.

Realization... Stable chairs need to be retained at service points.



Physical Environment Improvements

The Library partnered with Facilities and Environmental Health and Safety to reduce hazards and improve the physical environment.

- ✓ Replaced carpet, using squares for easy repair/replacement of torn areas. Rubber edge guards for color contrast added to see edge of stairs.
- ✓ Added power outlets for users to plug in laptops closer to walls
- ✓ Fixed fire doors such that they remain open automatically
- ✓ Installed larger signage for kiosk display and public areas
- ✓ Conducted drills on safe evacuation procedures

We considered how to adapt our virtual Library environment as well....

Older Users' Web Interactions: Eight Qualitative Observations

- 1. Older users (65+) are more likely to assume blame when using the internet.** Sample quotes from a UK study of eight seniors compared to a young group: "It's probably my fault;" "This always happens to me."
- 2. Older users use far more emotive words and phrases when referring to websites than younger users,** employing strongly positive or negative words in their remarks, such as "love," "hate," "stupid," and "friendly."
- 3. Some older users have not fully internalized the concept of browser windows or other conventions of the web.** Many older participants regularly failed to scroll down a page.
- 4. Older users were less likely to understand technical language.** A moderator's request to "bring up the minimized window" was not understood by five seniors (in comparison to not being understood by only two of the younger users).
- 5. Seniors are – as a group – more likely to click on elements of a page which aren't links.**
- 6. Older users are averse to downloading.** Five of eight older users expressed a strong aversion to downloading documents from the internet because they were "worried about bugs (i.e. viruses) and things."
- 7. Senior users are slower at completing tasks and reading.** The study's older participants required double the average time.
- 8. Older users tend to prefer "big and simple" design.** They reported anything less than 12-point type as being too small to read comfortably.

Source: <http://www.webcredible.co.uk/user-friendly-resources/web-usability/older-users.shtml>

Older Users’ Web Interactions: Quantitative Observations

To learn how seniors use the Web, Jakob Nielsen, a widely recognized usability expert, conducted three series of usability tests in 2002. Users of two age ranges were asked to perform the same four tasks: fact-finding, buying an item, retrieving information, and comparing and contrasting.

n = 40	Seniors (65+)	Control Group (21-55)
Success Rate	52.9%	78.2%
Time on Task (min:sec)	12:33	7:14
Errors Per Task	4.6	0.6

Source: <http://www.useit.com/alertbox/seniors.html>

In-House Usability Assessment

Thanks to a METRO Hospital Library Services Program technology grant, the Library recently completed a usability assessment of a proposed revision to our electronic journals page, making sure to include older adults. We found they were:

- ✓ more likely to browse for a journal title even when a search box was a prominent option.
- ✓ more likely to overlook relevant elements of a page, especially when those elements were “hidden” in 12-point font.
- ✓ less successful and took longer to complete the test tasks.

With these data, we learned to make important elements more visually prominent and to use graphic elements sparingly.

Design Recommendations for a Senior-Friendly Website

1. **Use a simple interface**, which will help to decrease the number of features to be learned and most importantly, make the users feel in control of the situation.
2. **Use ample white space.** Proper use of negative space gives structure and order to a page's design elements.
3. **Use high-contrast colors.** Example: black text on a white background. Green text on a blue background: not such a good idea.
4. **Given that some seniors will miss that a page has more text beyond a screen length, consider breaking up lengthy pages into a series of individual pages.** Just make sure these other pages are findable through thoughtful link placement.
5. **Use consistent design conventions across a given website.** Cultivate your users' sense of familiarity for your site.
6. **Limit moving interface elements.** Pull-down menus and other moving interface elements cause problems for seniors who are not always steady with the mouse.
7. **Use big and meaningful icons and buttons, when possible, accompanied with text.**
8. **Use a text size of *at least* 12 pixels (px).** This is the most widely known principle for supporting seniors' computer use.
9. **Use left-justified text.**

Source: <http://www.useit.com/alertbox/seniors.html>

Language Considerations

1. **When possible, avoid technical jargon.** Even the word “browser” may be confusing to some people.
2. **Make content as concise and clear as possible.** Notices for first-time users should not necessarily occupy prime real estate.
3. **When providing instructions, make them explicit and use the imperative forms of verbs.** “Go to more details on...”, “Find a...”, etc.
4. **Use positive phrasing and present information in a clear manner without need for inferences.** “Full-time employees of the Medical Center are eligible for an email account.”

Other Considerations

1. **Offer help and contact information in a prominent and consistent location.** Depending on the topic, tutorials can sometimes be of value too.
2. **Limit need to download/install special programs, plugins, etc. to access content.** Having information only in PDF format presents an additional hurdle.
3. **Use a site map to show how information is organized.**

Source: http://psychology.wichita.edu/surl/usabilitynews/61/older_adults.htm

The Library's Upcoming Redesign: Friendly for Users of All Ages



1. Font size greater than or equal to 12 pixels, (except footer which is 11px). Body text is 13.8 px. Line height for main content area is set around 1.5 and width is 589 px for maximum readability.
2. Limited use of moving parts, dropdown menus, etc.
3. Breadcrumbs for quick backtracking.
4. Code “validates” in XHTML and CSS, which improves odds that older users will be able to successfully use the site with an adaptive device such as a text reader.
5. Extra design elements kept to minimum and ample use of white space.
6. Structure of page “degrades” nicely when text size increases. In other words, using the browser to increase the text size won't completely ruin the design.

Future Directions

Other initiatives being planned or already in the works:

- ✓ Ensuring new computers have USB ports easily accessible for flash drives.
- ✓ Providing pull and hold service for patrons who find the stacks difficult or inconvenient to navigate
- ✓ Taking ease of use into consideration when purchasing new resources and working with vendors to improve senior-friendliness of electronic resources.

What can you do?

- ✓ Do a Geriatric Environmental Assessment of your library's physical space.
- ✓ Assess the senior-friendliness of your library's website and the electronic resources you license/promote.
- ✓ Work with your organizational colleagues to implement improvements in the areas you've identified.

* We'd love to hear what other libraries have done to make things easier for all users.